

WHAT IS CLAIMED:

1. A light emitting diode assembly comprising:

a light emitting diode having a front luminescent portion and a mounting base, said mounting base having a heat transfer plate on a rear surface thereof and a first and second contact lead extending from the sides thereof;

a mounting die, said mounting die being thermally conductive, said mounting die having a rear surface, said mounting die having a recess in said rear surface thereof and an aperture extending there through, said recess being configured to receive said mounting base of said light emitting diode, wherein said luminescent portion of said light emitting diode extends through said aperture; and

a spreader plate, said spreader plate being thermally conductive, said spreader plate in thermal communication with said heat transfer plate of said light emitting diode and said rear surface of said mounting die, wherein said spreader plate conducts heat from said light emitting diode to said mounting die.

2. The light emitting diode assembly of claim 1, further comprising:

a voids in said spreader plate corresponding to said first and second contact leads of said light emitting diode disposed to preventing said contact leads of said light emitting diode from contacting said spreader plate.

3. The light emitting diode assembly of claim 1, further comprising:

a circuit board adjacent to said spreader plate, said circuit board in electrical communication with said first and second contact leads of said light emitting diode.

4. The light emitting diode assembly of claim 1, further comprising:
means for fastening said spreader plate to said mounting die.
5. The light emitting diode assembly of claim 4, wherein said means for fastening is screws.
6. The light emitting diode assembly of claim 4, wherein said means for fastening is a thermally conductive adhesive.
7. The light emitting diode assembly of claim 1, wherein said aperture in mounting die is a reflector.
8. The light emitting diode assembly of claim 1, wherein said aperture in said mounting die is non-reflective.
9. A heat sink assembly for mounting a light emitting diode comprising:
a mounting die, said mounting die having a first side and a second side opposite said first side, said mounting die having a recess formed in said first side, said recess including a side wall and a bottom wall and an aperture extending from said bottom wall of said recess through said second side of said mounting die, said recess being configured to receive and retain a light emitting diode, wherein a luminescent portion of said light emitting diode extends through said aperture; and

means for conducting heat from said light emitting diode to said mounting die.

10. The heat sink assembly of claim 9, wherein said means for conducting heat is a spreader plate in thermal communication with said first side of said mounting die and said light emitting diode.

11. The light emitting diode assembly of claim 10, further comprising:
means for fastening said spreader plate to said mounting die.

12. The light emitting diode assembly of claim 11, wherein said means for fastening is screws.

13. The light emitting diode assembly of claim 11, wherein said means for fastening is a thermally conductive adhesive.

14. The light emitting diode assembly of claim 9, wherein said aperture in mounting die is a reflector.

15. The light emitting diode assembly of claim 9, wherein said aperture in said mounting die is non-reflective.

16. A flashlight assembly comprising:

at least one battery, said battery having a first and second electrical contact, said first contact;

a flashlight head assembly connected to said at least one battery and including,

a light emitting diode having a front luminescent portion and a rear mounting base, said mounting base having a heat transfer plate on a rear surface thereof and a first and second contact lead extending from the sides thereof,

a mounting die, said mounting die being thermally conductive, said mounting die having a rear surface, said mounting die having a recess in said rear surface thereof and an aperture extending there through, said recess being configured to receive said mounting base of said light emitting diode, wherein said luminescent portion of said light emitting diode extends through said aperture,

a spreader plate, said spreader plate being thermally conductive, said spreader plate in thermal communication with said heat transfer plate of said light emitting diode and said rear surface of said mounting die, wherein said spreader plate conducts heat from said light emitting diode to said mounting die,

an exterior enclosure; and

means for selectively energizing said light emitting diode disposed between and in electrical communication with said first and second contacts of said battery and said first and second contacts on said light emitting diode.